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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/579,982	05/26/2000	James L. Winkler	03848-00005	1925

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EXAMINER

LUDLOW, JAN M

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

09/579,982

### Applicant(s)

WINKLER ET AL.

### Examiner

Jan M. Ludlow

### Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 48-73, 75-104, 106-126 and 152-164 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-73, 75-104, 106-126 and 152-164 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 22, 2004 has been entered.

2. Claims 48-73, 75-104, 106-126, 152-164 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 48, "the dispenser adjusted ...." is unclear—it is unclear what structure is intended, i.e., what structure relates to "in a single coupling step"? Does this mean that the positioning system sets the position and then the dispenser dispenses a single volume, and then the positioning system moves to another area? Is there a controller that makes the apparatus operative to perform the single coupling step? Is that supported in the specification? Note that if the specification does not support the above, a generic statement such as "wherein the apparatus is operative to ..." would provide the functional limitation necessary for patentability. How does the limitation to "when positioned..." relate to the positioning system? In claim 1, line 11, "a support" is unclear because it is unclear whether or not this refers to the previously recited support, or some other support. In claim 1, line 11, it is unclear whether "individual localized areas" are the same or different from the previously recited localized areas. It is unclear how the "solution of compound" relates to the ligands arrayed. See also claim 152.

Claim 51 is unclear because it is directed to a method step and it is unclear how there can be both contact and distance—Does this refer to embodiments in which the positioner is operative to move the dispenser to contact the substrate prior to positioning a distance away? See also claim 153.

Claim 125 is unclear as to how repeated dispensing to the same localized area relates to the limitation to adjustment for a single coupling step.

3. Claims 48-73, 75-104, 106-126, 152-164 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

4. The following is a statement of reasons for the indication of allowable subject matter: Applicant's arguments are persuasive. Note the claims as amended must include a limitation that the apparatus is operative to perform the single coupling step.

Deeg ('638) teaches deposition of droplets onto a substrate in compartments. The compartments can be individual dots (col. 3, line 4). The dots can be produced by a quantum of liquid ejected from a printer to cover an area as small as 500 square micrometers (col. 3, lines 27-37). Center to center spacing of dots from one compartment to the next may be as small as .26mm (col. 9, line 3) in an embodiment in which overlapping dots are used in each compartment. None of the examples teaches an embodiment with separate dots, and it is therefore unclear whether or not one of ordinary skill would have used a) individual drops ejected from the printer to form individual dots (instant single step) or the same spacing between individual dots in all directions as between the lines (compartments) in the multi-dot compartments shown

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(resulting in the instant density). Deeg teaches ligands (antibodies), and further teaches that other specific bioreactive interactions may be used (col. 1, line 36). Deeg teaches that compartments should be close together, but spatially separated (col. 2, lines 64-65). The compartments contain different reagents (col. 3, lines 11-12). With or without Prats, an inkjet printer head is spaced from the substrate. However, Deeg '638 teaches a test strip with repeating patterns of three reagents, and the instant claims define over Deeg by at least the limitation to 100-1000 different ligands, which Deeg does not seem to contemplate at all.

Deeg ('688) has a similar disclosure as Deeg ('638) with respect to individual dots and overlap (col. 6, lines 22-32), but only discusses "several" reagents (col. 5, line 12), and a 12 jet printhead (col. 6, line 62), neither of which suggest the 100-1000 different ligands presently claimed.

Brennan ('796) teaches depositing plural droplets per region (col. 7, lines 63-64), and therefore does not teach or suggest "a single coupling step" as claimed.

Gordon also fails to teach or suggest "a single coupling step" as claimed for the volume claimed at the density claimed. The rejections over Pirrung and Southern are similarly overcome.

The examiner agrees with applicant that the disclosure of Khrapko is not sufficiently detailed to support a rejection. The examiner further notes that, e.g., on page 4 of the Facts and Arguments in Support of Opposition by A. G. Sheard, filed in a related application, the method of Khrapko is interpreted as a capillary (contact) method.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow  
Primary Examiner  
Art Unit 1743

Jml  
July 12, 2004